Claims:

1. A method for designing a fluid dynamic bearing system, comprising:

determining a first stability ratio for a first journal bearing configuration;

determining a second stability ratio for a second journal bearing configuration; and

comparing the first and the second stability ratios.

2. The method of claim 1, wherein the first configuration comprises two sub-journal bearings and the second configuration comprises three sub-journal bearings.

3. The method of claim 2, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length and each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length.

4. The method of claim 1, further comprising the step of determining a third stability ratio of a third journal bearing configuration if the second stability ratio is greater than the first stability ratio.

5. The method of claim 4, further comprising the step of comparing the second and third stability ratios.

6. The method of claim 4, wherein the first configuration comprises two sub-journal bearings, the second configuration comprises three sub-journal bearings, and the third configuration comprises four sub-journal bearings.

7. The method of claim 6, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length, each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length, and each sub-journal bearing of the

third journal configuration has a length equal to substantially one-fourth of the total journal length.

8. The method of claim 1, wherein the first configuration comprises N number of sub-journals and the second configuration comprises (N+1) number of sub-journals.

9. The method of claim 8, further comprising the steps of:

determining a third stability ratio of a third journal bearing configuration, the third configuration comprising (N+2) number of sub-journals, if the second stability ratio is greater than the first stability ratio; and

comparing the third stability ratio to the second stability ratio.

10. A fluid dynamic bearing system, comprising:

a gap region between an inner member and an outer member;

an optimal journal bearing configuration, including at least three sub-journal bearings, disposed along the gap region, wherein the optimal configuration is determined by a method, comprising:

determining a first stability ratio for a first journal bearing configuration;

determining a second stability ratio for a second journal bearing configuration;

comparing the two stability ratios; and

determining that the second stability ratio is greater than the first stability ratio.

11. The system of claim 10, wherein the first configuration comprises two sub-journal bearings and the second configuration comprises three sub-journal bearings.

12. The system of claim 11, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length and each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length.

13. The system of claim 10, wherein the method further comprises the steps of:
determining a third stability ratio of a third journal bearing configuration; and
comparing the third stability ratio to the second stability ratio.

14. The system of claim 13, wherein the first configuration comprises two sub-journal bearings, the second configuration comprises three sub-journal bearings, and the third configuration comprises four sub-journal bearings.

15. The system of claim 14, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length, each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length, and each sub-journal bearing of the third journal configuration has a length equal to substantially one-fourth of the total journal length.

16. The system of claim 10, wherein the first configuration comprises N number of sub-journals and the second configuration comprises (N+1) number of sub-journals.

17. The system of claim 16, wherein the method further comprises the steps of:
determining a third stability ratio of a third journal bearing configuration, the third configuration comprising (N+2) number of sub-journals; and
comparing the third stability ratio to the second stability ratio.

18. A fluid dynamic bearing system, comprising:
a first gap region between an inner member and an outer member; and
at least three sub-journal bearings disposed along the first gap region, the at least three sub-journal bearings associated with a first stability ratio, the first stability ration greater than a second stability ratio associated with having only two sub-journal bearings disposed along the first gap region of the fluid dynamic bearing system.

19. The system of claim 18, further comprising a hub coupled to the outer member and configured to rotate relative to the inner member.

20. The system of claim 18, further comprising a hub coupled to the inner member and configured to rotate relative to the outer member.